

CLAIMS

What is claimed is:

1. A system to replace a photosensitive unit and a transfer unit in a printer, the system comprising:

a printer body having an entrance to access a mounting location;

a frame provided in the printer body; and

a locking unit, which is provided in the frame and simultaneously locks and unlocks a photosensitive unit and a transfer unit that enter via the entrance of the printer body to be seated in the mounting location of the printer body.

2. The system of claim 1, further comprising:

first guide protrusions formed on the photosensitive unit and the transfer unit; and

a guide rail provided in the frame to guide each of the first guide protrusions of the photosensitive unit and the transfer unit that enter via the entrance of the printer body to be disposed in the mounting location.

3. The system of claim 2, wherein the photosensitive unit comprises a damping member, the transfer unit is stacked on the photosensitive unit and is elastically supported by the damping member of the photosensitive unit, and the locking unit comprises a rotating lever which is rotatably installed in the frame and which comprises a first locking portion to lock the transfer unit so that the transfer unit does not deviate from a direction along which the first guide protrusion of the transfer unit enters when the rotating lever is rotated in a locking direction.

4. The system of claim 3, wherein the transfer unit further comprises a second guide protrusion which is locked by the rotating lever, and the guide rail comprises a first guide rail along which the first guide protrusion of the photosensitive unit and the first guide protrusion of the transfer unit are guided, and a second guide rail along which the second guide protrusion of the transfer unit is guided.

5. The system of claim 4, further comprising:

an auxiliary locking unit which locks the second guide protrusion of the transfer unit.

6. The system of claim 5, wherein the auxiliary locking unit comprises:
an interference lever rotatably installed in the frame; and
a spring which elastically biases the interference lever so that a free end of the interference lever protrudes toward the second guide rail;
wherein the free end of the interference lever comprises a slant surface on which the second guide protrusion smoothly moves down along the second guide rail when the transfer unit is mounted in the second guide rail, and a stepped surface which prevents the transfer unit from coming out of the printer body.

7. The system of claim 2, wherein the locking unit comprises:
a rotating lever rotatably installed in the frame;
a first locking portion formed on the rotating lever to lock and unlock the transfer unit so that the transfer unit does not deviate from a direction along which the first guide protrusion of the transfer unit enters when the rotating lever is rotated in a locking direction and an unlocking direction;
a rotating cam rotatably installed in the frame and comprises a second locking portion that locks the photosensitive unit by pressing the first guide protrusion of the photosensitive unit when the second locking portion is rotated in the locking direction; and
a connection bar which connects the rotating cam and the rotating lever so that the rotating cam and the rotating lever move together in one of the locking direction and the unlocking direction.

8. The system of claim 7, wherein the transfer unit further comprises a second guide protrusion, and the guide rail comprises a first guide rail along which the first guide protrusion of the photosensitive unit and the first guide protrusion of the transfer unit are guided, and a second guide rail along which the second guide protrusion of the transfer unit is guided.

9. The system of claim 8, further comprising:
an auxiliary locking unit which locks the second guide protrusion of the transfer unit.

10. The system of claim 9, wherein the auxiliary locking unit includes:
an interference lever rotatably installed in the frame; and
a spring which elastically biases the interference lever so that a free end of the interference lever protrudes toward the second guide rail;

wherein the free end of the interference lever comprises a slant surface, on which the second guide protrusion smoothly moves along the second guide rail when the transfer unit is mounted within the second guide rail, and a stepped surface which prevents the transfer unit from exiting the printer body.

11. The system of claim 2, wherein the photosensitive unit comprises:

a photosensitive drum;

a case which covers a part of the photosensitive drum;

a handle rotatably coupled with the case; and

a damping member which shock-absorbingly contacts the transfer unit.

12. The system of claim 1, wherein the transfer unit comprises:

a transfer belt;

a case which covers the transfer belt; and

a handle rotatably installed in the case.

13. The system of claim 1, wherein the photosensitive unit and the transfer unit enter the printer body via the entrance formed in an upward direction of the printer body.

14. A printer comprising a photosensitive unit on which an image to be printed is formed through exposure and development operations, a transfer unit which transfers the image formed on the photosensitive unit onto paper, and a system to replace the photosensitive unit and the transfer unit, wherein the system comprises:

a printer body having an entrance to access a mounting location;

a frame provided in a printer body; and

a locking unit provided in the frame and simultaneously locks and unlocks a photosensitive unit and a transfer unit that enter via the entrance of the printer body and are seated in the mounting location.

15. The printer of claim 14, wherein the system further comprises first guide protrusions formed on the photosensitive unit and the transfer unit, respectively, and a guide rail provided in the frame and guides each of the first guide protrusions of the photosensitive unit and the transfer unit that enter via the entrance of the printer body to be disposed in the mounting location.

16. The printer of claim 15, wherein the photosensitive unit comprises a damping member, the transfer unit is stacked on the photosensitive unit and is elastically supported by the damping member of the photosensitive unit, and the locking unit comprises a rotating lever rotatably installed in the frame, and a first locking portion to lock and unlock the transfer unit so that the transfer unit does not deviate from a direction along which the first guide protrusion of the transfer unit enters when the rotating lever is rotated in a locking direction and an unlocking direction.

17. The printer of claim 16, wherein the transfer unit further comprises a second guide protrusion to be locked by the rotating lever, and the guide rail comprises a first guide rail along which the first guide protrusion of the photosensitive unit and the first guide protrusion of the transfer unit are guided, and a second guide rail along which the second guide protrusion is guided.

18. The printer of claim 18, wherein the system further comprises:
an auxiliary locking unit which locks the second guide protrusion of the transfer unit.

19. The printer of claim 18, wherein the auxiliary locking unit comprises:
an interference lever rotatably installed in the frame; and
a spring which elastically biases the interference lever so that a free end of the interference lever protrudes toward the second guide rail;
wherein the free end of the interference lever comprises a slant surface on which the second guide protrusion smoothly moves along the second guide rail when the transfer unit is mounted within the second guide rail, and a stepped surface which prevents the transfer unit from exiting the printer body.

20. The printer of claim 15, wherein the locking unit comprises:
a rotating lever rotatably installed in the frame and comprises a first locking portion to lock the transfer unit so that the transfer unit does not deviate from a direction along which the first guide protrusion of the transfer unit enters when the rotating lever is rotated in a locking direction;
a rotating cam rotatably installed in the frame and comprises a second locking portion that locks the photosensitive unit by pressing the first guide protrusion of the photosensitive unit

when the second locking portion is rotated in the locking direction; and

a connection bar which connects the rotating cam and the rotating lever to move together in one direction of the locking direction and an unlocking direction.

21. The printer of claim 20, wherein the transfer unit further comprises a second guide protrusion, and the guide rail comprises a first guide rail along which the first guide protrusion of the photosensitive unit and the first guide protrusion of the transfer unit are guided, and a second guide rail along which the second guide protrusion of the transfer unit is guided.

22. The printer of claim 21, wherein the system further comprises:
an auxiliary locking unit which locks the second guide protrusion of the transfer unit.

23. The printer of claim 22, wherein the auxiliary locking unit includes:
an interference lever rotatably installed in the frame; and
a spring which elastically biases the interference lever so that a free end of the interference lever protrudes toward the second guide rail;
wherein the free end of the interference lever comprises a slant surface on which the second guide protrusion smoothly moves along the second guide rail when the transfer unit is mounted in the second guide rail, and a stepped surface which prevents the transfer unit from exiting the printer body.

24. The printer of claim 14, wherein the photosensitive unit comprises:
a photosensitive drum;
a case which covers a part of the photosensitive drum;
a handle rotatably coupled with the case; and
a damping member which shock-absorbingly contacts the transfer unit.

25. The printer of claim 14, wherein the transfer unit comprises:
a transfer belt;
a case which covers the transfer belt; and
a handle rotatably installed in the case.

26. The printer of claim 14, wherein the photosensitive unit and the transfer unit enter the printer body via the entrance formed in an upward direction of the printer body.